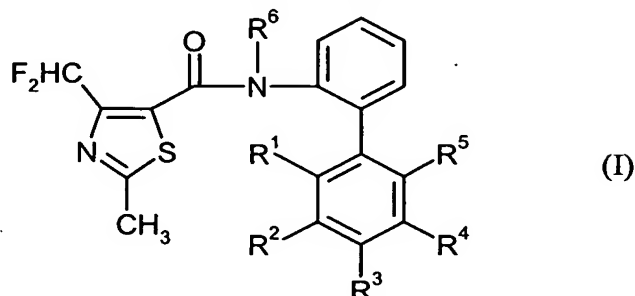


**Claims**

1. A thiazolylbiphenylamide of the formula (I)



5 in which

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$  and  $R^5$  independently of one another represent hydrogen, halogen, cyano, nitro,  $C_1$ - $C_6$ -alkyl,  $C_2$ - $C_6$ -alkenyl,  $C_1$ - $C_4$ -alkoxy,  $C_1$ - $C_4$ -alkylthio,  $C_1$ - $C_4$ -alkylsulfonyl,  $C_3$ - $C_6$ -cycloalkyl, or represent  $C_1$ - $C_4$ -haloalkyl,  $C_1$ - $C_4$ -haloalkoxy,  $C_1$ - $C_4$ -haloalkylthio or  $C_1$ - $C_4$ -haloalkylsulfonyl having in each case 1 to 5 halogen atoms,

$R^1$  and  $R^2$  or  $R^2$  and  $R^3$  furthermore together represent optionally halogen- or  $C_1$ - $C_6$ -alkyl-substituted alkenylene,

15  $R^6$  represents  $C_1$ - $C_8$ -alkyl,  $C_1$ - $C_6$ -alkylsulfinyl,  $C_1$ - $C_6$ -alkylsulfonyl,  $C_1$ - $C_4$ -alkoxy- $C_1$ - $C_4$ -alkyl,  $C_3$ - $C_8$ -cycloalkyl;  $C_1$ - $C_6$ -haloalkyl,  $C_1$ - $C_4$ -haloalkylsulfonyl,  $C_1$ - $C_4$ -haloalkylsulfinyl,  $C_1$ - $C_4$ -haloalkylsulfonyl, halo- $C_1$ - $C_4$ -alkoxy- $C_1$ - $C_4$ -alkyl,  $C_3$ - $C_8$ -halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; -COR<sup>7</sup>,  
20 -CONR<sup>8</sup>R<sup>9</sup> or -CH<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,

$R^7$  represents hydrogen,  $C_1$ - $C_8$ -alkyl,  $C_1$ - $C_8$ -alkoxy,  $C_1$ - $C_4$ -alkoxy- $C_1$ - $C_4$ -alkyl,  $C_3$ - $C_8$ -cycloalkyl;  $C_1$ - $C_6$ -haloalkyl,  $C_1$ - $C_6$ -haloalkoxy, halo- $C_1$ - $C_4$ -alkoxy- $C_1$ - $C_4$ -alkyl,  $C_3$ - $C_8$ -halocycloalkyl having in each  
25 case 1 to 9 fluorine, chlorine and/or bromine atoms, or 4-(difluoromethyl)-2-methyl-1,3-thiazol-2-yl,

$R^8$  and  $R^9$  independently of one another represent hydrogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl; C<sub>1</sub>-C<sub>8</sub>-haloalkyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

5

$R^8$  and  $R^9$  furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle which is optionally mono- or polysubstituted by identical or different substituents from the group consisting of halogen and C<sub>1</sub>-C<sub>4</sub>-alkyl and which has 5 to 8 ring atoms, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulfur and NR<sup>12</sup>,

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$R^{10}$  and  $R^{11}$  independently of one another represent hydrogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl; C<sub>1</sub>-C<sub>8</sub>-haloalkyl, C<sub>3</sub>-C<sub>8</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

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$R^{10}$  and  $R^{11}$  furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle which is optionally mono- or polysubstituted by identical or different substituents from the group consisting of halogen and C<sub>1</sub>-C<sub>4</sub>-alkyl and which has 5 to 8 ring atoms, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulfur and NR<sup>12</sup>,

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$R^{12}$  represents hydrogen or C<sub>1</sub>-C<sub>6</sub>-alkyl.

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2. The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$  and  $R^5$  independently of one another represent hydrogen, fluorine, chlorine, bromine, cyano, nitro, methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl, methoxy, ethoxy, methylthio, ethylthio, n- or isopropylthio, cyclopropyl, trifluoromethyl, trichloromethyl, trifluoroethyl, difluoromethoxy, trifluoromethoxy, difluorochloromethoxy, trifluoroethoxy, difluoromethylthio, difluoro-

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chloromethylthio or trifluoromethylthio,

R<sup>1</sup> and R<sup>2</sup> or R<sup>2</sup> and R<sup>3</sup> furthermore together represent optionally fluorine-, chlorine-, bromine- or methyl-substituted butadienediyl,

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R<sup>6</sup> represents C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl; C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkylsulfanyl, C<sub>1</sub>-C<sub>4</sub>-haloalkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>-haloalkylsulfonyl, halo-C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; -COR<sup>7</sup>, -CONR<sup>8</sup>R<sup>9</sup> or -CH<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,

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R<sup>7</sup> represents hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl; C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkoxy, halo-C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms or 4-(difluoromethyl)-2-methyl-1,3-thiazol-2-yl,

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R<sup>8</sup> and R<sup>9</sup> independently of one another represent hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl; C<sub>1</sub>-C<sub>4</sub>-haloalkyl, halo-C<sub>1</sub>-C<sub>3</sub>-alkoxy-C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

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R<sup>8</sup> and R<sup>9</sup> furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle which is optionally mono- to tetrasubstituted by identical or different substituents from the group consisting of halogen and C<sub>1</sub>-C<sub>4</sub>-alkyl and which has 5 to 8 ring atoms, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulfur and NR<sup>12</sup>,

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R<sup>10</sup> and R<sup>11</sup> independently of one another represent hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl; C<sub>1</sub>-C<sub>4</sub>-haloalkyl, C<sub>3</sub>-C<sub>6</sub>-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

5 R<sup>10</sup> and R<sup>11</sup> furthermore together with the nitrogen atom to which they are attached preferably form a saturated heterocycle which is optionally mono- or polysubstituted by identical or different substituents from the group consisting of halogen and C<sub>1</sub>-C<sub>4</sub>-alkyl and which has 5 to 8 ring atoms, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulfur and NR<sup>12</sup>,

10 R<sup>12</sup> represents hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl.

3. The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which

15 R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> independently of one another represent hydrogen, fluorine, chlorine, bromine, cyano, methyl, methoxy, methylthio, trifluoromethyl, difluoromethoxy, trifluoromethoxy, difluoromethylthio or trifluoromethylthio,

20 R<sup>6</sup> represents methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl, pentyl or hexyl, methylsulfinyl, ethylsulfinyl, n- or isopropylsulfinyl, n-, iso-, sec- or tert-butylsulfinyl, methylsulfonyl, ethylsulfonyl, n- or isopropylsulfonyl, n-, iso-, sec- or tert-butylsulfonyl, methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, cyclopropyl, cyclopentyl, cyclohexyl, trifluoromethyl, trichloromethyl, trifluoroethyl, difluoromethylsulfanyl, difluorochloromethylsulfanyl, trifluoro-

25 methylsulfanyl, trifluoromethylsulfinyl, trifluoromethylsulfonyl, trifluoromethoxymethyl; -COR<sup>7</sup>, -CONR<sup>8</sup>R<sup>9</sup> or -CH<sub>2</sub>NR<sup>10</sup>R<sup>11</sup>,

30 R<sup>7</sup> represents hydrogen, methyl, ethyl, n- or isopropyl, tert-butyl, methoxy, ethoxy, tert-butoxy, cyclopropyl; trifluoromethyl, trifluoromethoxy or 4-(difluoromethyl)-2-methyl-1,3-thiazol-2-yl,

R<sup>8</sup> and R<sup>9</sup> independently of one another represent hydrogen, methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl, methoxymethyl, methoxy-

ethyl, ethoxymethyl, ethoxyethyl, cyclopropyl, cyclopentyl, cyclohexyl; trifluoromethyl, trichloromethyl, trifluoroethyl, trifluoromethoxymethyl,

5             $R^8$  and  $R^9$  furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle from the group consisting of morpholine, thiomorpholine and piperazine, which heterocycle is optionally mono- to tetrasubstituted by identical or different substituents from the group consisting of fluorine, chlorine, bromine and methyl, where the piperazine may be substituted on the second  
10            nitrogen atom by  $R^{12}$ ,

$R^{10}$  and  $R^{11}$  independently of one another represent hydrogen, methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl, methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, cyclopropyl, cyclopentyl, cyclohexyl; trifluoromethyl, trichloromethyl, trifluoroethyl, trifluoromethoxymethyl,

$R^{10}$  and  $R^{11}$  furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle from the group consisting of morpholine, thiomorpholine and piperazine, which heterocycle is optionally mono- to tetrasubstituted by identical or different substituents from the group consisting of fluorine, chlorine, bromine and methyl, where the piperazine may be substituted on the second  
20            nitrogen atom by  $R^{12}$ ,

$R^{12}$  represents hydrogen, methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl.

30        4.        The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which in each case four of the radicals  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$  and  $R^5$  represent hydrogen.

5.        The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which

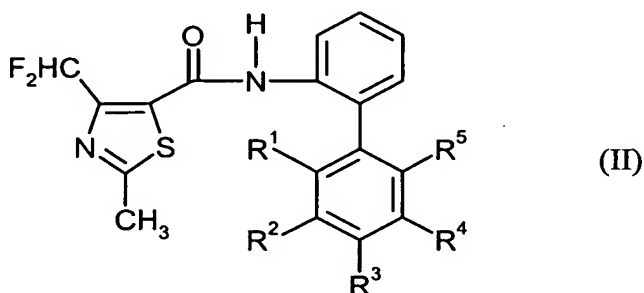
$R^1$ ,  $R^2$ ,  $R^4$  and  $R^5$  each represent hydrogen and  
 $R^3$  is as defined in any of claims 1 to 3.

- 5      6.      The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^2$ ,  $R^4$  and  $R^5$  each represent hydrogen and  
          $R^1$  and  $R^3$  independently of one another are as defined in any of claims 1 to 3.
- 10     7.      The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^1$ ,  $R^4$  and  $R^5$  each represent hydrogen and  
          $R^2$  and  $R^3$  independently of one another are as defined in any of claims 1 to 3.
- 15     8.      The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^1$ ,  $R^3$  and  $R^5$  each represent hydrogen and  
          $R^2$  and  $R^4$  independently of one another are as defined in any of claims 1 to 3.
9.      The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^6$  represents  $-\text{COR}^7$  and  $R^7$  represents 4-(difluoromethyl)-2-methyl-1,3-  
         thiazol-2-yl.
- 20     10.     The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^6$  represents  $-\text{COR}^7$  and  $R^7$  represents methyl, ethyl, cyclopropyl or tri-  
         fluoromethyl, in particular methyl.
- 25     11.     The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^6$  represents  $-\text{CHO}$ .
- 30     12.     The thiazolylbiphenylamide of the formula (I) as claimed in claim 1 in which  
          $R^6$  represents methyl, ethyl, n- or isopropyl, n-, iso-, sec- or tert-butyl,  
         methylsulfinyl, methylsulfonyl, methoxymethyl, ethoxyethyl, cyclo-  
         propyl, cyclopentyl, cyclohexyl, trifluoromethyl, trichloromethyl, tri-  
         fluoromethylsulfonyl, trifluoromethylsulfinyl, trifluoromethylsulfonyl,  
         trifluoromethoxymethyl, in particular methyl, isopropyl or cyclo-  
         propyl.

13. A process for preparing thiazolylbiphenylamides of the formula (I) as claimed in claim 1, characterized in that

(A) thiazolylbiphenylamides of the formula (II)

5



in which

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$  and  $R^5$  are as defined in claim 1

10

are reacted with a halide of the formula (III)



in which

$R^6$  is as defined in claim 1 and

15

X represents chlorine, bromine or iodine

in the presence of a base and in the presence of a diluent.

14. A composition for controlling unwanted microorganisms, characterized in that it comprises at least one thiazolylbiphenylamide of the formula (I) as claimed in claim 1, in addition to extenders and/or surfactants.

20

15. The use of thiazolylbiphenylamides of the formula (I) as claimed in claim 1 for controlling unwanted microorganisms.

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16. A method of controlling unwanted microorganisms, characterized in that thiazolylbiphenylamides of the formula (I) according to claim 1 are applied to

the microorganisms and/or their habitat.

17. A process for preparing compositions for controlling unwanted microorganisms, characterized in that thiazolylbiphenylamide of the formula
- 5 (I) as claimed in claim 1 is mixed with extenders and/or surfactants.